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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,550	04/14/2004	Jae-yong Cho	1572.1258	4413

21171 7590 02/28/2006

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
WILLOUGHBY, TERRENCE RONIQUE	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/823,550	CHO ET AL.
	Examiner	Art Unit
	Terrence R. Willoughby	2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4/14/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2,5-9,13-14,17,22,24,25,28,29 are rejected under 35 U.S.C. 102(e) as being anticipated by Koshiishi et al. (US 2003/0106647 A1).

Regarding claims 1,22, and 24 Koshiishi et al. discloses the claimed said electrostatic chuck to chuck an object using electrostatic force (Fig. 5), the electrostatic chuck comprising: a main body (1) to support the object (W); a guide ring (3) supported by the main body and encircling the object; a dielectric material layer (2) interposed between the guide ring and the main body; a media gas supplier (6) to supply a media gas to the guide ring; and a power supplier (4) to supply power to the main body.

Regarding claim 2, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the main body (Fig. 5, 1) is made with conductive materials such that the power supplied to the main body is transmitted to the dielectric material layer and the guide ring. The reference teaches that the main body serves as an electrode (paragraph [**0012**]). Therefore it is necessarily conductive.

Regarding claim 5, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising a media gas supply hole (Fig. 5, 6) for the guide ring (Fig. 5, 3) in the provided in the main body (Fig. 5,1), wherein the media gas supplied form the media gas supplier flows therethrough and contacts the guide ring.

Regarding claim 6, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the object is a planar object (Fig. 5, W).

Regarding claim 7, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the object is a plate type wafer (Fig. 5, W).

Regarding claims 8 and 25, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising a plurality of media gas supply holes (Fig. 5, 6) provided in the main body (Fig.5, 1), wherein the media gas flows therethrough.

Regarding claim 9, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 8, wherein the plurality of media gas supply holes (Fig. 5, 6) penetrate the main body (Fig.5, 1) and the dielectric layer (Fig. 5,2) and the media gas flowing therethrough contacts the guide ring (Fig. 5,3) and the object (Fig. 5,W).

Regarding claim 13, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising an RF generator (Fig. 5, 4) to supply RF power to the main body (Fig. 5, 1).

Regarding claim 14, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 13, wherein the RF power (Fig. 5, 4) supplied to the main body

(Fig. 5,1) is transmitted to a reaction gas for a semiconductor manufacturing process (paragraph [**0011**]).

Regarding claim 17, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer (Fig. 5,2) is made with a highly dielectric material (polyimide resin, paragraph [**0011**]).

Regarding claim 28, Koshiishi et al. discloses the claimed said method of cooling a guide ring in an electrostatic chuck, the method comprising: cooling the guide ring (Fig. 5, 3) using a media gas (Fig. 5,16) supplied through a plurality of media gas supply holes (Fig. 5, 6) provided in a main body (Fig. 5,1), wherein the media gas contacts the guide ring.

Regarding claim 29, Koshiishi et al. discloses the claimed said method of claim 28, the method further comprising cooling an object (Fig. 5, W) being chucked by the electrostatic chuck using the media gas (Fig. 5,16) supplied through the plurality of media gas supply holes (Fig. 5, 6) provided in the main body, wherein the media gas also contacts the object (Fig. 5, W).

3. Claims 1,3-20, 22-30 rejected under 35 U.S.C. 102(e) as being anticipated by Koshiishi et al. (US 2003/0106647 A1).

Regarding claims 1,22, and 24 Koshiishi et al. discloses the claimed said electrostatic chuck to chuck an object using electrostatic force (Fig. 1), the electrostatic chuck comprising: a main body (Fig. 1, 11) to support the object (Fig. 1, W); a guide ring (Fig. 1, 12) supported by the main body and encircling the object; a dielectric material layer (Fig. 1, 14a) interposed between the guide ring and the main body; a media gas

supplier (Fig. 1, 16) to supply a media gas to the guide ring; and a power supplier (Fig. 1, 13) to supply power to the main body.

Regarding claims 3 and 23, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising an electrode interposed between the dielectric material layer (Fig. 1, 14a) and the main body (Fig. 1, 11), wherein the power supplier (Fig. 1, 13) supplies power to the electrode (paragraph **[0012]**, ll. 5-9).

Regarding claim 4, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 3, further comprising a second dielectric material layer (Fig. 1, 14b) interposed between the electrode and the main body (Fig. 1,11).

Regarding claim 5, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising a media gas supply hole (Fig. 1, 16) for the guide ring (Fig. 1, 12) in the provided in the main body (Fig. 1,11), wherein the media gas supplied form the media gas supplier flows therethrough and contacts the guide ring.

Regarding claim 6, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the object is a planar object (Fig. 1, W).

Regarding claim 7, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the object is a plate type wafer (Fig. 1, W).

Regarding claims 8 and 25, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising a plurality of media gas

supply holes (Fig. 1, 17c) provided in the main body (Fig.1, 11), wherein the media gas flows therethrough.

Regarding claim 9, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 8, wherein the plurality of media gas supply holes (Fig. 1, 17c) penetrate the main body (Fig.1, 11) and the dielectric layer (Fig. 1,14a) and the media gas flowing therethrough contacts the guide ring (Fig. 1,12) and the object (Fig. 1,W).

Regarding claims 10 and 26, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 9, wherein the gas contacting the guide ring cools the guide ring and the media gas contacting the object cools the object, whereby the guide ring (Fig. 1, 12) and the object (Fig. 1, W) are maintained at a similar temperature such that an outside edge and a middle part of the object are maintained at a similar temperature (paragraph **[0043]**).

Regarding claims 11 and 27, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 8, wherein the plurality of media gas supply holes (Fig. 1, 17c) comprise a first group of media gas supply holes (Fig. 1, 17b) and a second group of media gas supply holes (Fig. 1, shorter holes are located on both sides of holes 17b) not connected to the first group of media gas supply holes, wherein the first group of media gas supply holes contains a first media gas that contacts the guide ring, and the second group of media gas supply holes contains a second media gas that contacts the object, wherein the first media gas and the second media gas are different (paragraph **[0038]**).

Regarding claim 12, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the main body further comprises: a coolant supplier to supply coolant (paragraph [**0038**], lines 7-9); and a plurality of coolant passages (Fig. 1, 18) provided in the main body (Fig.1, 11), wherein the coolant supplied by the coolant supplier flows through the plurality of coolant passages, thereby cooling the main body.

Regarding claim 13, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, further comprising an RF generator (Fig. 1, 13) to supply RF power to the main body (Fig. 1, 11).

Regarding claim 14, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 13, wherein the RF power (Fig. 1, 13) supplied to the main body (Fig. 1,11) is transmitted to a reaction gas for a semiconductor manufacturing process (paragraph [**0038**]).

Regarding claim 15, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer (Fig. 1, 14a) is interposed by layering on the main body (Fig. 1, 11).

Regarding claim 16, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer (Fig. 1,14a) is interposed by bonding on the main body (Fig. 1, 11).

Regarding claim 17, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer (Fig. 1,14a) is made with a highly dielectric material (paragraph [**0031**]).

Regarding claim 18, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer is made with oxide, nitride, or ceramic (paragraph **[0031]**).

Regarding claim 19, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the dielectric material layer (Fig. 1, 14a) is made of a surface-processed material (paragraph **[0031]**).

Regarding claim 20, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, wherein the media gas (Fig. 1, 16) is helium (paragraph **[0038]**, lines 18-22).

Regarding claim 28, Koshiishi et al. discloses the claimed said method of cooling a guide ring in an electrostatic chuck, the method comprising: cooling the guide ring (Fig. 1, 12) using a media gas (Fig. 1,16) supplied through a plurality of media gas supply holes (Fig. 1, 17c) provided in a main body (Fig. 1,11), wherein the media gas contacts the guide ring.

Regarding claim 29, Koshiishi et al. discloses the claimed said method of claim 28, the method further comprising cooling an object (Fig. 1, W) being chucked by the electrostatic chuck using the media gas (Fig. 1,16) supplied through the plurality of media gas supply holes (Fig. 1, 17c) provided in the main body, wherein the media gas also contacts the object (Fig. 1, W).

Regarding claim 30, Koshiishi et al. discloses the claimed said method of claim 29, wherein the guide ring (Fig. 1, 12) and the object (Fig. 1, W) are maintained at similar temperatures such that an outer edge of the object and a center of the object are

maintained at a similar temperature (paragraph **[0043]**), thereby allowing for a uniform processing of the object (abstract, ll. 15-18).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al. (US 2003/0106647 A1).

Regarding claim 21, Koshiishi et al. discloses the claimed said electrostatic chuck according to claim 1, however, the reference does not disclose the media gas is argon, however, it would have been obvious to those skilled in the art at the time the invention was made to use argon as the media gas for its high heat conductive capabilities. Furthermore, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

Conclusion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrence R. Willoughby whose telephone number is 571-272-2725. The examiner can normally be reached on 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRW
2/8/06

PHUONG T. VU
PRIMARY EXAMINER